

the earlier), and necessarily identical in membership in so far as can be the case where a greater includes a lesser, the Nuttall Club, at a meeting held October 1, voted to discontinue its 'Bulletin' with the close of the present volume; and to offer to the American Ornithologists' Union its goodwill and subscription-list—to place the 'Bulletin' in the hands of the Council of the Union, with its traditions and prestige, with the tacit understanding that the new serial of the Union shall be ostensibly a *second series* of the Nuttall 'Bulletin.' It is therefore to be hoped and expected that the many friends of the 'Bulletin' who have hitherto given it such hearty support will extend their allegiance to the new publication of the Union, freely contribute their observations to its pages, and use their influence to extend its usefulness."

IX.—*Rough Notes on Spanish Ornithology.*

By ABEL CHAPMAN.

(Plate IV.)

THE following rough notes on Spanish ornithology are the result of observations extending over a period of some fourteen or fifteen months, at different times, in the Peninsula. They refer chiefly to Andalusia, where I spent two springs, and which province, from its geographical position between Europe and Africa, as well as from the richness and great variety of its natural features, is probably unsurpassed as regards its avifauna by any similar extent of ground in Europe.

I find the work of Spanish ornithology already so far advanced by Lord Lilford, Mr. Howard Saunders, and Col. Irby that, at least so far as the enumeration of native species goes, there remains little to be desired. Mr. Saunders (*Ibis*, 1871, p. 54 *et seq.*) and Col. Irby (*Orn. Straits of Gibr.*) have compiled accurate and comprehensive lists of the birds of Southern Spain, which, according to my observations, comprise all or nearly all those species which can be considered either indigenous or migratory to that country. No

doubt more extended observations would result in some additions to their lists; but such could only or mainly, I think, be the accidental occurrences of stragglers from Africa or Eastern Europe. Therefore I now propose to supplement the work of the above ornithologists by notes of my personal observations of such species as I met with, arranged, as nearly as may be convenient, in the different years in datal sequence.

During two springs my "base of operations" was the city of Jerez de la Frontera, in Andalucia, and the first expedition to the Sierra de Jerez for a week's boar-shooting. This sierra, a spur of the Nevada range, at a point about thirty miles east of Jerez trends to the southward, and finally ends in our noble fortress of Gibraltar. Riding out, on the 26th of March, through the sandy vine-clad zone which surrounds the city of Jerez, the most conspicuous birds were the Blackstart (*Ruticilla titys*), everywhere flitting about the hedges of cactus and prickly pear, and the Woodchat perched on the topmost lobe; up and down the tall flowering stalks of the aloe climbed Blue and Great Tits. Further out, on the plains of palmetto-scrub, our Common Stonechats and Wheatears of two species (*Saxicola aurita* and *S. stapazina*) abounded; but certainly the most numerous species was the Common Bunting (*Emberiza miliaria*). The number of this bird throughout Spain is incalculable; wherever one may be, there are the "Trigueros" in thousands, and their harsh monotonous scream is positively irritating in its ceaselessness. The Alaudidæ were also represented by many Calandra and Short-toed Larks; and along the sandy lanes the Crested Larks were busily dusting themselves. It is worth noting that our common Sky-Lark and Meadow-Pipit, and also the Song-Thrush, all of which are abundant in winter in Spain, had already proceeded north to breed; whilst *Turdus merula* and *Emberiza miliaria* are resident in that country. A few Redstarts were observed, and numerous lively flocks of Goldfinches flitted by. For several leagues in the vicinity of the sierra our course lay through undulating wooded plains of exquisite beauty. Here the characteristic species were Rollers, newly arrived, Southern Grey Shrikes, and

Black Kites, three or four of which were constantly soaring within sight, while the familiar notes of Cuckoo and Cushtat reminded one of home.

Towards evening we entered the rugged defiles of the sierra, the towering ranges of which, surrounding us on every side, bore unmistakable evidence of their long struggles with glacial ice in bygone ages. Each tall slope consisted of a regular series of vertical bastions, or buttresses, extending nearly to the summit, and alternating with deep glens in singular uniformity. The conformation of these sierras recalled irresistibly to my recollection the distant valleys of Spitzbergen, where I have seen the power of ice in actual operation and carving out those dreary arctic hills after precisely the same pattern. Here, however, dense jungle had long taken the place of snow, and the wild boar now occupied strongholds where *possibly* the reindeer had once ranged in search of scanty lichen.

Of birds, the most conspicuous were the Griffon Vultures ; in small parties of six or eight, these huge birds maintain an incessant surveillance of the sierras. In the short periods of our "drives" (perhaps an hour) I often noticed the same beat explored by two or even three parties. They hunt the sierras comparatively low, thus differing widely from the enormous altitudes at which their patrols search the plains. These Vultures breed gregariously ; and in a high range of limestone-crags at the Boca de la Foz, a fine abrupt chasm separating the Sierras del Valle and de las Cabras, I reached several nests. They were moderately large flat structures of sticks, placed on narrow ledges in the face of the crags. None contained eggs on 28th March. The old birds, when shot, have a most offensive smell ; their claws and long feathers are much abraded by attrition on the rocks, and their whole plumage has a worn and faded appearance in harmony with the decay and death in which they rejoice. Of other birds observed in the sierra in March, the Blue Thrush and Black Chat were abundant, several colonies of Rock-Martin (*Cotyle rupestris*, as well as such common species as Red-legged Partridge, Blackbird, &c. A pair of Golden

Eagles frequented the Boca de la Foz, apparently contemplating a nest there. In this chasm we killed a boar weighing 185 lb., and observed several wild cats and ichneumons. On the 31st a large arrival of Bee-eaters (*Merops apiaster*) took place.

About the end of March is a favourable season for Bustard-shooting. These birds abound in the great rolling cornlands, where the wheat is at that time sufficiently grown to cover the hidden guns, but not these great birds when feeding—*i. e.* nearly girth-deep. Bustards feed morning and evening; from 10 A.M. till about 3 P.M. they lie down in the corn for a siesta during the heat of the day. It is then mere chance-work finding them; and to make sure of a shot it is therefore necessary to send men the night before, who mark the positions of the “bandadas,” which are then driven according to wind and local conditions. The Bustards are in companies of from five to fifty, males and females together, and feed principally on the green blades of wheat, but are also very fond of the profusion of seeds which are ripening in those wildernesses of weeds which the Spanish farmer calls “manchon” or fallow. Habitually occupying much more land than he is able to cultivate, the Spanish farmer is thereby driven to adopt what he calls a “three-years’ system,” only raising a crop every third year; this leaves the remaining land to exhaust itself by a prodigious crop of weeds during two years. Thus two thirds of the productive power is wasted, and the “mano negra” and agrarian discontent flourish in lieu of corn, oil, and wine. The Bustard at least benefit by the “system,” and the brilliancy and variety of the wild flowers are a wonderful sight.

The flight of the Bustards is strikingly powerful; they are not very “hard” birds, but have a keen eye for concealed danger in their course; and, as a rule, if one sees them coming they also have seen you, and at once sheer off. My friend Mr. W. J. Buck, of Jerez, who is a master of the art, has killed as many as fifty or sixty in a season. I do not think they are migratory, but shift their ground according to the season. I once saw seven of them in May in the heart of the Sierra de

Ronda, steadily winging their way high over those lofty peaks.

Towards the end of May the Great Bustards moult heavily, losing nearly all their quills together. They are then unable to fly, and to this circumstance is probably owing the traditional idea of their having formerly been coursed with greyhounds. Except at this season they could no more be killed in that way than could a Wild Goose. A magnificent old male was brought into Jerez, except for his wings, in beautiful plumage, and with the gorgeous chestnut ruff in perfect order.

There are not many other birds on these monotonous cornlands. A few Quails and Little Bustards, the usual hosts of Larks and Buntings, and now and then a Montagu's Harrier, mostly the handsome males*, looking almost white in the sunshine, are all one sees. I should not, however, omit the Storks, a pair of which frequent each "cortijo," where the female is then sitting on her eggs on the straw-thatched roof.

My next expedition was to the "marismas" of the Guadalquivir, lying to the westward of Jerez. We have in English no equivalent to the Spanish "marisma;" and the region is so peculiar, both physically and ornithologically, as to require a short description. If the reader will look at a map of Spain there will be noticed a large tract on the lower Guadalquivir totally void of names of villages &c. From Lebrija on the east to Almonte on the west, and from the Atlantic almost up to Seville itself, the map is vacant; this huge district is, in fact, a wilderness, and in winter the greater part of it is a dismal waste of water. For league after league, as one advances into its forbidding desolation, the eye rests on nothing but water—water meeting the sky all round the horizon. The Guadalquivir intersects the marisma, its triple channel divided from the adjacent waters by low mudbanks. The water of the marisma is fresh, or nearly so, quite drinkable, and has a varying depth of

* Possibly some of these were *C. cyaneus* or *C. pallidus*, but those obtained were all of the above-mentioned species.

1 to 2 feet, according to the season. Here and there slight elevations of the muddy bottom form low islands, varying from a few yards to thousands of acres in extent, covered with coarse grass, thistles, and bog-plants, and frequented in spring by great numbers of interesting birds. As the hot weather sets in, the water gradually evaporates, and by the middle of June little remains but in pools. The marisma is then a vast flat plain of dry mud, scorched and cracked in all directions by the fierce summer sun. A coarse herbage springs up, and near the water-holes beds of rank reeds form the nurseries of the Heron tribe.

In winter the marisma abounds with wildfowl, chiefly Grey Geese, Duck, Wigeon, Pintail, and Teal. So great are their numbers that a class of professional gunners willingly pay a small rent for the privilege of shooting, and earn a subsistence thereby up to the end of March—this, too, although their artillery and appliances are of the most primitive description.

Early in April I spent eight or ten days in the marisma, cruising about in punts. The Geese and Wigeon had then entirely disappeared, but passage-Ducks were still numerous in large flights on the open water; these were principally Mallard, with Pochard and Pintail, and probably other species. The local-breeding Mallard were already in pairs along the rushy edges of the marisma, though not yet sitting. In addition to the species above named we obtained a Shoveller and several Crested Ducks. As late as 13th April I shot a Scoter drake (*Ædemia nigra*) on the Guadalquivir. These black ducks were very numerous in winter along the coast of Portugal. I was also shown, as a curiosity, a Cormorant which had been shot a day or two previously.

One cannot go far into the marisma without seeing that extraordinary fowl the Flamingo, certainly the most characteristic bird of the wilderness. In herds of 300 to 500, several of which are often in sight at once, they stand feeding in the open water, all their heads under, greedily tearing up the grasses and water-plants from the bottom. On approaching them, which can only be done by extreme caution, their silence is first broken by the sentries, who

commence walking away with low croaks; then the whole five hundred necks rise at once to the full extent, every bird gagging his loudest as they walk obliquely away, looking back over their shoulders as though to take stock of the extent of the danger. Pushing a few yards forward, up they all rise, and a more beautiful sight cannot be imagined than the simultaneous spreading of their thousand crimson wings, flashing against the sky like a gleam of rosy light. Then one descends to the practical, and a volley of slugs cuts a lane through their phalanx.

In many respects these birds bear a strong resemblance to Geese. Like them, Flamingos feed by day; and great quantities of grass &c. are always floating about the muddy water where a herd has been feeding. Their cry is almost undistinguishable from the gagging of Geese, and they fly in the same catenarian formations. The irides of the oldest individuals are very pale lemon-yellow; the bare skin next the eye is also yellow, and the whole plumage beautifully suffused with warm pink. In the young birds of one year (which do not breed) this pink is entirely absent, and even their wings bear but slight traces of it. The secondaries and tertiaries of these immature birds are barred irregularly with black spots; and their legs, bills, and eyes are of a dull lead-colour. In size, Flamingos vary greatly; the largest I have measured was fully 6 feet 5 inches, while others (old red birds) barely reached 5 feet.

As we advanced into the marisma, bird-life became even more abundant. Besides the Ducks and Flamingos, flocks of long-legged Stilts fairly whitened the water, and members of the Heron tribe were conspicuous, principally, I think, Buff-backed Herons, Egrets, and Spoonbills. The latter, however, were very wild and restless, and all my efforts to get within reach failed. About the small mud-islands were immense flights of Dunlins in full breeding-plumage, smaller ones composed of Kentish Plovers and Lesser Ring-Dotterels mixed with Redshanks and Pewits, the two latter paired. Green-shanks and Knots I did not meet with then, though a month later (in May) I found both species, together with Whimbrels,

Grey Plovers, and Curlew Sandpipers. On the 8th of April the Pratincoles arrived, and after that date they were abundant all over the dry mud and sand, feeding on beetles. Their beak has a very wide gape, which is bordered with a margin of deep vermilion. Sometimes twenty or thirty of these birds would cast themselves down on the mud all round one, and all lie down head to wind, much as a Nightjar squats on the sand. They resemble a Tern while standing, a Plover when running, and on summer evenings hawk after insects like a Swallow.

No Avocets were seen till April 13th, when I shot three out of a large flight. One of these was much smaller than the others and proved a male, the larger pair being male and female. This discrepancy in size appeared not unusual. They are singularly restless birds, active and sprightly in all their movements. Their cry is a short, sharp, "jerky" pipe; the Stilt's is a harsh croak. Both species fly with the long legs extended. The latter vary considerably in the disposition of black and white, especially on the head and neck. Some few have roseate breasts. The Stilts are surface-feeders, never putting their heads under; and as, owing to the extreme length of their legs, they cannot reach the ground with their bills, they necessarily feed in water about knee-deep. On the same day (April 13th) numbers of Little Terns (*Sterna minuta*) appeared, gracefully hovering over the weedy water. The larger Whiskered Tern (*Hydrochelidon hybrida*) had been frequently observed previously. Along the rushy edges of the marisma, bordering the Coto de Doñana, Buff-backed and Squacco Herons were numerous, the former frequently sitting on the backs of the half-wild cattle, where they resort to feed on the ticks and "warbles," as farmers call what, I believe, is the embryo gadfly. The Herons often appear fast asleep in this strange position, their heads snugly tucked under their back-feathers, their long toes and strong claws enabling them to sit thus securely. Scattered about in the shallow water were pairs of Little Egrets; these and the Squacco Herons seem to feed on the large water-beetles, often plunging their heads under water to catch them as they

dive. Towards Rocio, where the reed-beds are very extensive, we met with the Purple Heron. I found a nest, with one egg, as early as 9th April; it was merely an armful of the tops of the long reeds bent down. This egg was longer and of a deeper shade than those of *Ardea cinerea*. About these reed-beds Little and Eared Grebes were tolerably plentiful, and Coots very numerous. The nests of the latter, floating in 4 feet of water, contained eggs as early as 31st March and furnished us with many a breakfast. The Grebes were only beginning to assume their summer plumage.

The night of April 10th I spent at Rocio, being rather tired of the cold and comfortless nights, *sub Jove*, in the marisma, where an upturned punt afforded but scant shelter from the piercing winds of the "small hours." It was hardly a change for the better, as a more miserable ague-stricken spot I never beheld, and in a Spanish "posada" man and beast are reckoned exactly equal in relation to the "accommodation" (?) they require. However, the four-league tramp through sandy scrub-covered plains was a relief from the monotonous marisma, and there were fresh birds for a change. Hoopoes and Golden Orioles were observed for the first time, and Rollers, Southern Grey Shrikes, and Turtle-doves abounded. A pair of Spotted Woodpeckers (?sp.) and a single Azure-winged Magpie were the only instances of their occurrence I have met with; the latter, however, is abundant further inland. It was near Rocio also that I obtained the Red-backed Shrike (*Lanius collurio*), which species had not previously been recorded in Southern Spain, though there is a specimen in the museum of Jerez, said to have been shot near that city.

The next bird obtained was a Great Spotted Cuckoo, and shortly afterwards, while sitting at lunch, a fine female Hen-Harrier (*Circus cyaneus*). This was the last I saw of this species, which does not remain to breed in the south of Spain. They are not uncommon in winter, and I frequently saw them while Snipe-shooting. On the morning of the 11th, at a wooded swamp called La Rocina, I shot a Black Kite and a female Booted Eagle, which passed within reach as she

hunted the marsh. The next day I obtained a nest of the latter, built in the first fork of a big cork-tree, and containing one white egg.

April 10th. In the course of a long day's ride up the valley of the Guadalquivir I found seven or eight nests of the Egyptian Vulture on the cliffs which overhang that river. They were placed in holes in the face of the crags, and, from the rottenness of the rock, were mostly inaccessible; but eventually we reached two. The nests were made of rags and wool, no sticks, and were furnished with a most malodorous larder. In the first were two eggs, differing considerably in size and colour: the larger one was dull neutral brown; the other as richly marked as a Peregrine's. I took another handsome egg from this nest a month later. The bare skin on the face of these Vultures is bright orange-yellow, bill horn-colour, and legs flesh-colour.

In the highest crag of this ridge were a number of Griffons; but they were not nesting. None do so outside the sierra, the blue peaks of which lay some fifteen miles distant to the eastward. The large Vultures appear to use this cliff as a resting-place. In a lower part of the range a pair of Golden Eagles had had a nest, or rather nests, for there were two of them, which I was told they used alternately. The old Eagles had been shot; but I saw the nests, about forty yards apart—immense structures of sticks placed on ledges of the crag. These cliffs were also tenanted by a colony of Genets. Their lower slopes were now resplendent with acres of rhododendrons, just bursting into bloom. To-day a considerable arrival of Nightingales occurred; I have, however, seen them abundant by April 4th.

Beyond the marisma, on the west, lies the Coto de Doñana, a sandy well-wooded district, uninhabited, and abounding in game, both large and small. On 12th April, at the head of a small cavalcade provisioned for a ten-days' sojourn in those wilds, I set out thither, *viâ* San Lucar. Our first find was a nest of the Short-toed or (more appropriately) Serpent-Eagle, in a big stone-pine. This, like all the nests of this Eagle I have seen, was small, very thick in proportion to

width, had a layer of dead leaves, and then a lining of twigs. This species invariably lays but one large white egg; hence probably the relative smallness of their nests. Below are always strewn many vertebræ of serpents. A female I shot had a snake over 4 feet long in her beak, only a few inches hanging outside; another had a rabbit; but snakes and large reptiles are their principal food. The former are very numerous, many reaching 6 feet in length; and I killed lizards exceeding 3 feet. The legs and feet of this Eagle are pale blue; flight buoyant, but rather unsteady; and they show very white from below. I also found this species nesting in mountain-forests in the sierra.

In the Doñana the Red Kite (*Milvus iclinus*) is rather numerous, and my first day's work (April 15th) yielded five or six of their nests: they were all built in the scattered cork-trees, and each contained two eggs—some fresh, others a good deal incubated. I was rather disappointed in the eggs of this fine species; several clutches were but faintly marked, and one was absolutely white. In each case I shot or trapped one or both of the old birds at the nest. In the males the beak was invariably yellow almost to the tip, whereas that colour in the females was confined to the cere, the rest of the beak being horn-colour. Their well-known habit of sticking a collection of gaudy rags and rubbish on the branches round the nest was very useful in saving many an unnecessary climb. No nest was worth going up to unless a rag or two fluttered in the breeze. In one case I found a dead and dried White Owl hung up; in others quills of Spoonbill and other birds, old match-boxes, &c. The Black Kite (*M. migrans*) is more numerous, but breeds later. I did not find their eggs till April 21st; and early in May, in the deliciously redolent pine-forest of La Marismilla, took a large series, shooting most of the old birds off their nests. Their eggs are fully as large and as richly marked as those of the Red Kite, from which they are quite undistinguishable. Neither species makes any lining to its nest; and only once in each case did I find the dual number of offspring exceeded, namely, *M. iclinus*, three young, May 2nd, and *M. migrans*,

three eggs, May 10th. The latter appears to prefer the forests for nidification to the scattered trees, in which were most of the nests of *M. iclinus*.

On the wing the Red Kite shows a broad white band across the underside of the wings, caused by the basal half of the primaries being white below. In *M. migrans* this band is grey; the tail of the latter is also much less forked and is darker underneath*.

For capturing these and the other Raptores the circular steel traps were invaluable, being absolutely certain and saving much time. Besides, the miseries of a "puesto," or ambush, of one or perhaps even two hours' lying on the burning sand, awaiting the return of the old birds, were indescribable. A buzzing column of mosquitoes focussed themselves over one's face; tribes of black ants, like small dumbbells, and creeping things innumerable, penetrated up one's sleeves and down one's neck; while huge hairy spiders of hideous mien would gently lower themselves onto one's nose, just at the critical moment when it was essential to remain rigidly motionless.

The pine-forests also produced two or three nests of the Buzzard (*Buteo vulgaris*), each with three eggs. These nests and those of the Kites and Booted Eagle are hardly distinguishable from below, except that perhaps the last-named prefers the main fork while the others build out on the branches. In the crevices of these large nests are often placed the untidy grass-built edifices of the Spanish Sparrow (*Passer salicicola*). On April 21st a pair of Hobbies were observed frequenting a clump of pines, but no nest could be found.

Besides birds of prey, the scrub-covered plains swarmed with Magpies, many of whose nests we destroyed every day. By April 17th Red-legged Partridge, Cushtat, and Mallard

* The Black Kite having recently been included in the British list, on the strength of an individual killed in Northumberland, I may mention that Mr. Hancock kindly showed me this specimen, which appeared to differ considerably from those killed in Spain. As far as it was possible to judge from examining it in the case, it appeared to me to be of a different species.

were all laying, and we frequently found the eggs of all three sucked by the first-named mischievous vermin. It is strange that the Jay, which is abundant in Portugal, should be entirely absent from these Cotos. During April and May the cock Partridge was very noisy, and frequently perched on a high stump or dead branch to sing its peculiar song. Among the cork-trees, pairs of Golden Orioles were making love in their peculiar fashion, the male hovering suspended in the air like a Kestrel; Woodchats scolded from every bush, and flocks of Bee-eaters gleamed like jewels in the sun. Turtledoves, which appeared on the 10th, were now scattered over the plains in very great numbers; every few yards a dozen or so would spring from the scrub, and dash away with impetuous flight. I found them very good eating; perhaps they accommodated themselves to my crude style of cooking better than other birds. None of these species have eggs till about the middle of May, though the equally brilliant Roller had already commenced laying*. Another bird characteristic of the scrub is the Stone-Curlew (*Ædicnemus scolopax*). On these flat plains they were difficult of access, and, if winged, ran like a hare. Towards evening they are very noisy, piping something like a Curlew in spring. On the night of April 15th, while skinning a lynx by the light of our fire, the air around seemed full of them, their vociferations resounding from the darkness on every side. I found the first nest, or rather a single egg, on the bare sand, on 18th April. Their footprints in the sand are rectilineal. These five birds are resident, or at least are found throughout the winter. I have met with them in strange situations: high up on the barren stony mountains of the Minho, in Northern Portugal, flocks of them frequented the damp spots along the courses of the old Roman aqueducts. This was in November. Their local name there was "Mountain-Curlew" (*Masarico de montes*). Apropos of these hills the following rather strange incidents are perhaps worth noting:—Far out among the boulder-strewn ridges, while Redleg-shooting, I used to

* As late as May 9th I watched a pair of Golden Orioles to their nest in a tall "white elm;" but it was then only half finished.

find numbers of Green Woodpeckers, miles away from trees ; they were attracted thither by the swarms of ants. Many Nightjars (*Caprimulgus europæus*) and Little Owls also abode there ; the latter fluttered out from under one's feet, and, after a most un-owlish up-and-down flight, would dive in under a big boulder, more like a fish than a bird. Small flights of Teal also resorted to these hills during the day, sitting among the heather, and returning to the marshes at night.

To return to the Coto. April 17th produced a nest of *Lanius meridionalis*, its situation and construction resembling that of a Missel-Thrush. Many nests of the Spanish Green Woodpecker (*G. sharpii*, Saunders), which is one of the earliest breeders in Spain, now contained half-feathered young. I had already obtained their eggs early in the month. They are very numerous, and drill deep holes in the hard wood of the cork-trees. Their food consisting largely of ants and the small red and black beetles which cluster in nearly every crevice of the rough cork-bark, the characteristic "tapping" is seldom heard ; but their loud maniacal laugh is incessant. One of these birds, shot as late as 10th May, dropped an undeveloped shell-less egg, from which I conclude they must breed twice. On one occasion, while examining a second hole, a foot or two above a thriving family of *Gecini*, a large stoat leaped out right in my face—strange neighbours !

The Hoopoe is another bird whose monotonous note is ever audible. Their flight, like the last-named species, is undulating ; and when undisturbed their crest is depressed, projecting backwards. They are "fine-weather" birds, and during a shower of rain I have seen two or three of them creep into a crevice of a wall for shelter. These plains are infested with wild cats and badgers, also tall grey foxes of the "greyhound" breed. I shot one fox of the handsome dark variety or species, *Canis vulpes melanogaster*.

The Coto de Doñana contains many lakes, varying from mere rushy pools to extensive sheets of water, each occupied by a colony of water-fowl. On April 16th, riding up to the Laguna de Sopiton, several Mallards and Gadwalls flew off at our approach. I shot a drake of the latter from horseback,

whereupon numerous small dark ducks rose from the reed-beds: their species was unknown to me; but as they appeared loth to leave, we soon shot several as they circled round high in the air, with rapid rustling flight, like that of a Golden-eye. They were the Ferruginous Duck (*Fuligula nyroca*), and were evidently breeding, though a search for their nests proved futile. A month later, however, I obtained nests of both this Duck and of the Gadwall, built among rushes on dry ground. The latter, which is inappropriately called "Silbon real" (*i. e.* King-Wigeon, or Whistler), is a very silent duck and was always seen in pairs. In May I met with them singly, those shot then being all drakes, rising from small rushy pools.

In the tall reed-beds in mid-water were numerous Warblers, notably the Great Sedge- and Reed-Warblers; but owing to the depth of mud and water and the rank weeds, it was not possible to reach the spot. Along the margin many of the little Fantail Warblers frequented the shorter rushes, on which they build their purse-shaped nests. I noticed this species throughout the winter. While driving the Ducks, five Glossy Ibises flew over, passing within shot of Felipe, my cazador, who, however, failed to stop them; they were the only birds of this species I met with in Spain. Among the reeds, floating in about three feet of water, was a nest of the Marsh-Harrier; it resembled that of a Coot, and had perhaps been built originally by that bird, many of which bred there.

That afternoon (April 16th) I found in a tall detached cork-tree a nest of the Imperial Eagle; it was placed on the extreme summit, and contained three down-clad young, pure white. Two days afterwards I found another nest, this time in a stone-pine; in it were two eggs, slightly incubated. They were almost pure white; but an egg from a third nest, taken on the 10th, was spotted with pale Indian red. This last-named nest also contained two eggs, but the second was broken by the "piñero" who took them. There are still a few pairs of this superb Eagle in the district, though their numbers are sadly thinned by the greed of collectors since I first met with them there in 1872. I obtained a pair of magnificent adults from their nest—their deep brown, almost

black, plumage glossed with a fine purple metallic sheen and with snow-white shoulders. The cere and feet are pale lemon-yellow, and the irides finely reticulated with hazel; on the occiput is a patch of pale gold, the crown being black. The nests of these Eagles are about 4 feet across and invariably placed on the extreme summit of the tree, all projecting twigs being broken off so as to offer no impediment to the sitting Eagle's view. The lining consists of the green needles of the pine. These nests are most difficult to get into: from their position, affording no handhold above, and the extent to which they overhang, access can only be obtained by a manœuvre analogous to scaling the futtock-shrouds of an old line-of-battle ship.

With the first of the daylight the Eagles and most of the larger Raptores turn out for their morning hunt, and during the heat of the day enjoy a siesta on the peak of a lofty pine, where they remain conspicuously perched for hours together. Towards evening predatory operations are generally resumed. It is curious to observe their different methods of going to work: the Kites sweep about with buoyant desultory flight, not unlike large Gulls; the *Circaetus* wheels in wide circles over the *Cistus*-scrub; the Montagu's Harrier hunts, with impetuous flight, in long straight bee-lines, close over the "mancha," always appearing about to alight, but not doing so. But for systematic searching-out of his ground, none of them compare with the Imperial Eagle: usually in pairs, these noble tyrants choose a line of country, and with wide sweeps to right and left, crossing and recrossing each other at the central point like well-trained setters, they beat miles of scrub in a few hours; while a Buzzard or Marsh-Harrier will hover and circle round a single spot and spend half a day over a few acres of rushes. Nothing can well escape the Eagles: shortly, one of the pair detects the hidden game; for an instant his flight is checked, to assure a steady aim; then, with collapsed wings and a rushing sound, which is distinctly audible at a considerable distance, he dashes to the earth; a second or two later he rises with loud vociferations and a hapless rabbit suspended from his yellow claws. Their

short sharp bark is repeatedly uttered while hunting. Rabbits seem to constitute nine tenths of their prey, to judge from the Golgotha of these little animals' skulls below the nests. I also saw a Partridge brought thither, and remains of a Stone-Curlew and other birds.

In the beautiful gardens of El Palacio at Jerez, the Goldfinches already (April 29th) have young; so, too, have the Common Sparrow, and several broods of Blackbirds are already flown from their nests in the orange-trees. The Nightingales' nests were only about half built, and no eggs were laid till 8th May. Many of their nests were in ivy growing on walls, and placed four or five feet from the ground. Their eggs varied from light olive-green to dark bronze. The Willow-Wren family have now entirely disappeared from the garden.

On April 23rd, 1872, I found near Jerez an egg of the Cuckoo (*Cuculus canorus*) in a nest of the Stonechat, together with four eggs of the latter bird. A good many Cuckoos remain to breed in Andalusia, and this year I heard them often up to the end of May.

April 30th. At the pine-woods of Puerto Real to-day I found two nests of the Raven (*Corvus corax*), built on pines close together. One was lined with sheeps' wool, ready for eggs; the other with rabbit-fur, and contained five fresh eggs. This date is fully seven weeks later than the time of laying in Northumberland. I shot to-day the first Russet-necked Nightjar (*Caprimulgus ruficollis*) seen this year. Melodious Willow-Warblers were observed in the sedges along the river-banks; and another conspicuous arrival was the handsome Rufous Warbler (*Aëdon galactodes*), frequenting abundantly the hedges of cactus and prickly pear, in which I found a clutch of four eggs on 14th May. Of our common birds I have noted to-day Greenfinches and Linnets (*Linota cannabina*). Walking back to Jerez, a very wet afternoon, 18 miles, a congregation of many thousands of Swallows were sitting on the dry mud along the edge of the marisma.

Early in May I returned to the Guadalquivir district, equipped for a fortnight's sojourn in the wilds of the Coto de

Doñana and the marisma. While crossing the river above San Lucar, an Osprey was observed, and numerous Black Kites were, as usual, busy fishing in the tideway. On the 4th, a nest of the Booted Eagle contained two eggs, nearly fresh. On the side of the nest, from which I killed the female Eagle, lay a large lizard and half a rabbit. A Kestrel's nest in a pine contained six fresh eggs partly covered with fish-scales. Stopping that night at La Marismilla, I found two nests of White Owl (*Strix flammea*) in the roof. There were six eggs and three young birds, all mixed; and I captured both the old Owls on the nest. Next morning, shortly after daybreak, in a rushy glade, I came suddenly on a herd of about twenty wild pig, mostly females with their young: probably the exigencies of the season accounted for their being abroad at a later hour than is their habit. Later in the day I almost trod upon the old boar, deeply slumbering in an isolated thicket; he was grizzly with age, his fore quarters looking almost white as he trotted across the sand.

May 5th. To-day, in a long ramble along the edge of the marisma, a great variety of wildfowl was observed. Buff-backed and Squacco Herons, Egrets, Spoonbills, and Avocets in considerable flocks among the rushes, where I obtained many beautiful specimens by stalking. Further out on the shallow water were still small parties of Ducks, probably on passage; but these were not accessible. Presently I made out with the glass a score or so of red Knots, busily feeding along the shore: while I was creeping down on them, a fine adult male Marsh-Harrier rose from some rushes close at hand. I knocked him down, and found he was lunching on one of the Knots. The latter I could not mark down; but I observed seven Greenshanks feeding a little further off, one of which fell to a long shot: an immature bird. Curiously, I could see no adults of this species, though early in March I had found the old birds numerous in the "salinas" near Tangiers, but no young ones. The adults appear almost white at a short distance.

Our course lay across a wide bight of the marisma, which there projects into the land. Crossing this, I fell in with

several packs of Sand-Grouse (*Pterocles alchata*), which species arrives in Spain late in April; they are very wild birds, flying something like Teal and uttering a loud harsh croak. After much manœuvring on the flat marsh, I obtained several beautiful specimens of both sexes. No bird, I think, equals this species in the exquisite delicacy of the pencilling and the harmonious disposition of colours in its plumage. Their eye-circles and eyelids are of a beautiful ultramarine blue. Their summer plumage differs considerably from that of winter, as represented in "Bree," principally as follows:— In the male the throat is black, and a line of that colour passes through the eye to the ear. The head and neck are plain, *i. e.* unspotted, but the brownish-green back is covered with *large* yellow spots, some of which extend to the tertiaries. The female has the head spotted above the black line through the eye; below that the throat and cheeks are plain yellow. Her back plumage is so beautifully variegated as almost to defy description; briefly it is finely barred with yellow and black of various shades, but this is relieved by broad bars of a pale clear blue. Their name is hardly appropriate, for I never saw them on the sand, always on the mud, and when shot their feet and bills are generally covered with it. The larger species (*P. arenarius*) I did not meet with, though it is well known as "Corteza;" the present bird being called "Ganga," signifying a bargain, in reference to its edible qualities.

After heavy rains in April the mud and water in the marisma were unpleasantly deep for locomotion, and on the low islands many thousands of eggs had been destroyed by the rising of the water. A great variety of birds were now breeding, Stilts and Avocets being perhaps the most conspicuous: I found a few of their eggs to-day (May 5th), but a few days later they were in thousands. The Stilts make a tolerably solid nest of dead stalks, and lay four eggs, neatly arranged, points inwards*. The Avocet's eggs are larger and

* Several young Stilts obtained in the middle of June were mottled brown above. Legs of medium length, much thicker than those of the adults, especially about the knee, and pale brownish or clay-colour.

lighter in colour than those of the Stilts, and, except when among grass, they seldom have any nest at all, merely laying at random on the bare cracked mud, often 2 or 3 inches apart. Some of the Avocets' nests had four eggs; but as several of the others contained five, or even six, it was obvious that these were the produce of more than one bird. In the great majority of cases three was the number. In neither of these species is any concealment attempted, whereas the Redshank habitually chooses the centre of the thickest tuft of grass or bog-plant available. Peewits also breed very numerous on the islands of the marisma, but are much earlier: I found their eggs early in April, and on the 9th of May they were hatching, most nests having one or more young birds out, the other eggs chipping. Scattered about on the dry mud were numerous clutches of four small eggs, belonging to two other species, the Kentish Plover and the Lesser Ring-Dotterel; the latter were the less numerous of the two, and were just beginning to lay, choosing the gravelly ridges of the islands. The Kentish Plover is an earlier breeder, many of their eggs being hard-set May 5th. I had previously found a nest of this species as early as 14th April, containing three of the most strongly marked eggs I have ever seen. They make perhaps rather more attempt at a nest than the former species; but there is not much to choose between them, and I frequently noticed the eggs of both these and other species laid in a slight hollow scratched in the dried remains of cattle-droppings. On these islands were many nests of the Spanish Short-toed Lark (*Calendrella batica*), artlessly built of grass, and placed in small holes, like a Dunlin's, sometimes among thistles, as often on bare ground without cover. They were only commencing to lay on May 9th, most nests then containing one egg.

May 9th. While blowing and numbering eggs on a small island which was literally covered with Avocets' nests, my cazador Felipe, whom I had sent to explore another small island close at hand, came up with five eggs, which he said he thought must be Gull's. I saw at a glance he was right; and jumping up espied, among the clamorous crowd of

Avocets, Marsh-Terns, Stilts, and other birds overhead, a single pair of strangers—small, very long-necked Gulls. These I promptly knocked down, and at once recognized them as *Larus gelastes*. Only a few days before I had received a letter from Mr. Howard Saunders, especially enjoining me to keep a strict look-out for “the beautiful pink-breasted, slender-billed Gull.” I therefore at once instituted a careful search on all the islands in sight, never dreaming but that the five eggs and the two Gulls were related to each other. However, that afternoon I was greatly surprised to find another Gull’s nest containing two very different eggs (white ground, spotted with black and brown, like those of *Sterna cantiaca*), from which I also shot a female *L. gelastes*. This time, however, there was no doubt; for the bird, while “in articulo mortis,” actually laid a third egg in the water, a perfectly coloured and developed specimen exactly resembling the two in the nest. Then, to make assurance doubly sure, I found, on skinning the first pair, that the female contained another perfectly developed specimen of this very distinct egg. Of course this placed the identity of the eggs of *L. gelastes* beyond doubt; it was, however, equally certain that the first five eggs, which were dull greenish or stone-colour faintly spotted with brown, belonged to a different species. Accordingly I returned to the first-named islands, and at once perceived two or three pairs of small black-hooded Gulls; these had doubtless been overlooked in the morning, mixed up as they were among numbers of the Gull-billed Terns and other birds. They would not allow approach within shot, so I was obliged to risk a long chance with wire cartridge. The bird was feathered, but escaped at the moment. Two days afterwards, however, on a second visit I found it lying dead, and recognized it, by the black hood and strong bill, as *L. melanocephalus*, beyond a doubt the owner of one of the two nests.

These islands lay about six miles distant from the low shores of the marisma, and at that distance no land whatever was in sight. The “coup d’œil” therefrom presented an extraordinary scene of desolation: the only relief from the

monotony of endless wastes of water were the birds; a shrieking, clamouring crowd hung overhead, while only a few yards off the surface was dotted with troops of Stilts, sedately stalking about knee-deep—in no other situation do their long legs enable them to feed. Further away large flights of smaller Waders flashed, now white, now dark, in the sun: most of these were Ring-Dotterels, Dunlins, and Curlew Sandpipers, the two latter in full breeding-plumage. A Marsh-Harrier, oologically inclined, was being bullied and chased by a score of Peewits, and now and then a little string of Ducks high overhead would still remind one of winter. Beyond these, the strange forms of hundreds of Flamingoes met one's eye in every direction—some in groups or in dense masses, others with rigidly outstretched neck and legs flying in short strings, or larger flights “glinting” in the sunlight like a pink cloud. Many pairs of old red birds were observed to be accompanied by a single white (immature) one. But the most extraordinary effect was produced by the more distant herds, the immense numbers of which formed an almost unbroken white horizon, a sort of thin white line separating sea and sky round a great part of the circle.

A incident occurred one day which is worth recording as illustrative of the singular desolation of the scene. Far off in the marisma I noticed two large animals evidently watching me. I saw they were not deer, which often come out into the marisma, but never so far as to where I then was: so, putting in ball-cartridge, I rode towards them. At about 400 to 500 yards they suddenly wheeled round and trotted off with a shambling gait. There was no mistaking them then, as soon as their broadsides were exposed to view; they were two camels, one much larger than the other!

I had heard on my first visit to this wilderness, eleven years before, of the existence of camels therein, but was as incredulous as, no doubt, my readers will now be. However, I may add that some 40 years ago, or more, the experiment of using camels was tried in Andalucia, as they are so generally employed on the opposite shores of Morocco. The scheme failed, and the camels were set free in the marisma;

and if they do not breed in a feral state, it is difficult to account for one of those above mentioned being at least a third larger than the other*.

To return to the Flamingoes. On examining narrowly the different herds, there was an obvious dissimilarity in the appearance of certain groups: one or two in particular seemed so much denser than the others; the narrow white line appeared at least three times as thick, and in the centre looked as if the birds were literally piled upon each other. Felipe suggested that these birds must be at their "pajarera," or breeding-place; and after a long ride through rather deep water, we found that this was so. On our approach, the cause of the peculiar appearance of the herd from a distance became clearly discernible. Many of the birds were sitting down on a low mud island; some were standing on it, and others, again, were in the water. Thus the different elevations of their bodies formed what had appeared a triple or quadruple line.

On reaching the spot, we found a perfect mass of nests; the low mud plateau was crowded with them as thickly as the space permitted. These nests had little or no height: some were raised 2 or 3 inches, a few might be 5 or 6 inches; but the majority were merely circular bulwarks of mud, with the impression of the bird's legs distinctly marked on it. The general aspect of the plateau was not unlike a large table covered with plates. In the centre was a deep hole full of muddy water, which, from the gouged appearance of its sides, appeared to be used as a reservoir for nest-making materials.

Scattered all round this main colony were numerous single nests rising out of the water, and evidently built up from the bottom. Here and there two or three or more of these were joined together—"semi-detached," so to speak; these sepa-

* [I saw a small herd of these feral camels in the Coto de Doñana on the 3rd of May, 1868; but finding that my statement as to the breeding of the Crane in that neighbourhood was received with much incredulity, I kept the apparition of the camels to myself. I possessed the eggs of the Crane to convince the sceptics, but I could not have produced a camel!—H. S.]



rate nests rose some 6 or 8 inches above the water-level, and were about 15 inches across. The water was about 12 or 15 inches deep. None of these nests as yet contained eggs; and though I returned to the "pajarera" on the latest day I was in its neighbourhood (May 11th), they still remained empty. On both occasions many hundreds of Flamingoes were sitting on the nests, and on the 11th we had a good view of them at close quarters. Linked arm and arm with Felipe, and crouching low on the water, to look as little human as possible, we approached within some 70 yards before their sentries showed signs of alarm, and at that distance with the glass observed the sitting birds as distinctly as one need wish. Their long red legs doubled under their bodies, the knees projecting as far as or beyond the tail, and their graceful necks neatly curled away among their back-feathers, like a sitting Swan, with their heads resting on their breasts—all these points were unmistakable. (See Plate IV.) Indeed it is hardly necessary to point out that in the great majority of cases (the nests being hardly raised above the level of the flat mud) no other position was possible.

Still none of the crowded nests contained a single egg! How strange it is that the Flamingo, a bird which never seems happy unless up to his knees in water, should so long delay the period of incubation; for before eggs could be hatched in these nests and young reared the water would have entirely disappeared, and the Flamingoes would be left stranded in the midst of a scorching plain of sun-baked mud. Being unable to return to the marisma, I sent Felipe back there on 26th May, when he obtained the eggs; but as yet I have heard no particulars, my faithful cazador being unable to write. In 1872 I obtained eggs taken on the 24th of May. One of my specimens is extremely rugose.

On the 11th May the Pratincoles were just beginning to lay (one or two eggs in each nest); but subsequently I got them in basketfuls. Some of their eggs when taken have a beautiful purplish gloss; three is their complement, and they make hardly any nest.

Later, again, are the Terns. The Whiskered and Black

species breed in colonies, building their nests on the floating weeds of the lagoons in the Coto de Doñana; they all lay three eggs. Those of the Whiskered Tern are mostly green with small black spots; a few, however, are olive-brown. The eggs of the Black Tern are of a rich brown, heavily blotched with black. The large Gull-billed Tern breeds out on the islands of the marisma: I obtained their eggs on my first visit on 23rd May.

Early in May I had found several nests of the Montagu's Harrier, but no eggs till the 10th. These birds breed in the thickest "manchas," or jungle, which are often wholly impenetrable on account of the long and thorny "salza," a vicious sort of briar which entwines itself round the scrub, and forms a matted lacerating jungle often 15 or 20 feet high. Many of these "manchas" are islanded between ridges of blown sand, and are the stronghold of the Spanish lynx (*Felis pardina*), which are tolerably numerous and work havoc among Partridge and rabbits. Some of these Harrier's nests were on the ground, mere outlines of half-a-dozen twigs; others were placed 3 or 4 feet high, especially where there was water, and were loosely built of dead roots. In the water below lay many bones of rabbits. They also nest in the standing corn. The manner in which Felipe could call up the Harriers within shot by imitating the squeal of a wounded rabbit was surprising. Many of the Spanish "guardas" are intelligently observant of the *feræ naturæ* among which they live, and in field-craft they are far in advance of their British representatives.

During May I rode several times to the large Lagunas de Santa Olaya, where numerous wildfowl were breeding. Besides Mallards, Gadwalls, and Ferruginous Ducks, already described, were numerous Pintails, Teal, and some small grey ducks, I took to be *Anas marmorata*. I think some of the Pintails must remain to breed, as on May 8th I saw a "bunch" of a dozen or so at Santa Olaya, *all drakes*, their snow-white throats glistening in the sun. Near them a pair of Shoveller drakes were swimming. Next, the binocular rested on six of the most extraordinary-looking wildfowl I

ever met with; gambolling and splashing about on the water, chasing each other, now above now below its surface, like a school of porpoises, they appeared half birds, half water-turtles, with which the lagoon abounds. Presently they entered a small reed-margined bay, swimming very deep, only their turtle-shaped backs and heavy heads in sight. I crept down on them, and as they sat, splashing and preening themselves in the shallow water, stopped three—two dead, the third escaping, winged. They proved to be a duck and drake of *Erismatura mersa*, heavily-built diving-ducks, round in the back, broad and flat in the chest, with small wings like a Grebe, and long stiff tails like a Cormorant; the latter, being carried under water as a rudder, is not visible when the bird is swimming. The beak of the drake was much enlarged above, and of a light mazarine-blue colour. Their whole plumage (except the white face) was dark ferruginous, and not (as represented in Bree) white below. I found they were known to the guardas as “Patos porrones,” and subsequently found several pairs at the Laguna de Medina, near Jerez, where, on 23rd May, they were evidently breeding. At the same place were great numbers of the Great Crested Grebe (*Podiceps cristatus*), quaint-looking birds in their full summer dress. The nests of the Little Grebe were floating in every rushy pool.

As already mentioned, the Heron-tribe are numerous represented in Andalucia, both specifically and individually. Except *Ardea cinerea* and *A. purpurea* the whole family are late breeders. About the middle of May the Buff-backed Herons were often seen flying about the plains in packs of a score to fifty or more. The pretty little Squaccoes had then shifted their quarters to the reedy edges of the lagoons; and several nests appeared nearly ready for eggs in the “juncales,” or reed-beds; but none of the genus appear to lay before June. Besides the species of Ardeidæ already mentioned in this paper, the Night-Heron and the Bitterns, both Common and Little, are also numerous in Andalucia. Nevertheless, owing to their retiring and nocturnal habits, these species are seldom seen, being difficult to raise without a dog. The same remark

applies to the Rails, of which *Rallus aquaticus* and *Porzana maruetta* appear about equally numerous in the marshes. The Common Bittern, which is almost invariably "pointed" to by native dogs, falls a frequent victim to the Snipe-shooter in winter, lying extremely close in the rankest flags or reeds, in retired parts of the marshes. Its name of "Garza-mochuelo" (*i. e.* Owl-Heron), common to both Spain and Portugal, is singularly appropriate. I did not find its eggs, but have those of the Little Bittern.

As the long summer day draws to its close, the infinite variety of nocturnal sounds which during the short twilight suddenly awake into being strike strangely on a northern ear. Of crepuscular birds the first to commence the concert is the Russet-necked Nightjar (*Caprimulgus ruficollis*), which abounds all over the scrub. A few minutes later, from the cork-trees, resounds the note of the Little Owl, then the sharp ringing cry of the Scops Owl; while far and near, among the grass, the loud rattle of the crickets starts like an alarm; and from every pool the united croaks of literally millions of frogs form, as it were, a background of sound resembling the distant roar of a mighty city.

The Little Owls (*Athene noctua*) just mentioned breed in holes in the cork-trees, and early in May I found several of their nests with four and five eggs. In the same situations a Great Tit, with ten eggs, many Jackdaws, and other common species. On May 12th a Mallard's nest contained nine eggs, just chipping.

At Jerez, in the middle of May, I found several nests of the Orphean Warbler in bushes in the olive-woods, also one which I believe to be that of *Sylvia melanocephala*. The Woodchat's nests, many of which appeared ready for eggs on April 30th, contained none till May 14th. None of their eggs had any rufous tinge. The 14th May produced many nests of the Calandra, Crested, and Short-toed Larks, also of the Common Bunting, each of these with five eggs. On the 16th were added those of the Common Whitethroat, Rufous Warbler, and Lesser Kestrel. Bec-eaters were now laying in deep holes in the river-banks, breeding in colonies like

Sand-Martins. During April and May these birds frequented the plantations in the garden at Jerez in large flocks, and we noticed that their appearance among the trees was generally the precursor of heavy rains. I also obtained a nest of the Yellow Wagtail with four eggs.

During May Andalucia swarms with locusts, and over the fields of "garbanzos" or chick-pea, which they frequent, dozens of Black Kites are always hovering, while others are dotted about on the ground devouring these destructive insects.

In 1872 a considerable passage of Waders occurred on May 8th. The banks of the Guadalete river near Jerez swarmed with bird-life. A large "mixed bag" included Whimbrels, Grey Plovers, Curlew Sandpipers, Ring-Dotterels, and Sand-Grouse. Many of the Grey Plovers were superb specimens, in their beautiful black-and-white plumage, and the Curlew Sandpipers were in full rufous summer dress. Unfortunately the attractions of the Great Bustard, several of which were also in sight, proved irresistible; but I had the satisfaction of riding home that evening with my first Bustard slung to the "alforjas." I also observed that day a single Crane.

A visit to the sierra in the middle of May was not very productive. The Guadalete was in heavy flood: two men, together with their nine mules, were drowned in attempting the passage just as I rode up to the Barca Florida. Consequently, having to make a long detour, it was impossible to reach the sierra before nightfall. While improvising a camp among the palmetto-scrub at dark, an alarming sound attracted my attention. It resembled the distant bellowing of an enraged bull—a formidable beast in this land of the toreador; but Felipe assured me it only arose from the Andalusian Quail (*Turnix sylvatica*), a tiny game-bird which frequents the palmetto. In reference to its extraordinary lung-power, this little bird is called in Spanish "Torillo" = little bull. I only met with the species on one other occasion; but have two eggs which were laid in confinement at Jerez.

In the cliffs of the Puerta de Palomas, in the Sierra de Alcalá de los Gazules, the Griffon Vultures had now (May 16) half-grown young, partly feathered and partly in white down. Of sixteen nests reached, only two contained more than one young bird. The Vultures, on returning to their nests, utter a peculiar growl, often the first sound heard at daybreak on awakening from one's roofless bedroom among the boulders. The young Griffons were never seen on the wing till the month of July, having spent about three months in the nests; they were then (July 10th) of a clear bright cinnamon-colour, and measured between 8 and 9 feet in expanse of wing.

In the plains the Griffon Vultures hunt in strata at varying altitudes, the highest tiers visible being mere points in the azure height. It seems obvious that only the lowest stratum can be on active duty, the upper parties merely standing by to profit by the labours of all the working detachments which may be in sight below; for at their enormous elevation it is impossible that even a Vulture could detect so small an object as, say, a dead goat on the earth. We estimated the altitude of the lowest stratum at 800 to 1000 yards.

In the roofs of some large caverns a colony of Alpine Choughs were breeding; their nests were quite inaccessible; but at a lower point were several of *Cotyle rupestris*; their eggs were flecked slightly with grey. In the attempt to reach the Chough's nests, I came suddenly on a pair of Eagle-Owls; but being in a very awkward position on the crag-face, I was unable to spare a hand to shoot them. No better luck attended a search for the nest of the Blue Thrush; but a few days afterwards a clutch of its five beautiful greenish-blue eggs was taken. The male has a pretty habit of towering up in the air, singing merrily, then dropping back among the crags like a stone.

Round the lofty conical peak called the "Peñon de Hibe," which towers over the surrounding sierras, something like a gigantic facsimile of Arthur's Seat over the Salisbury crags, I had the pleasure of observing for some time a magnificent *Gypaetus barbatus*, the only specimen of this fine bird that came under my observation.

From the rugged stony slopes of the sierras, the energetic mountaineers have reclaimed many patches of corn-land. About these *Emberiza cia* and *E. miliaria* were abundant. I failed to find the nest either of the first-named bird or of *E. cirrus*, which were also numerous in the lower valleys and outskirts of the sierra. A high crag on the ridge of the sierra was occupied by a colony of Alpine Swifts; their nests were in crevices of the rock, and their flight strikingly dashing and powerful.

My two animals having fallen lame from loss of shoes, caused me no small difficulty in extricating myself from the heart of these rugged and pathless sierras. My non-arrival in Jerez also caused extreme anxiety among my kind friends there, who unfortunately connected my disappearance with the accident (above mentioned) on the Guadalete. Incidentally I may remark that travelling in the wilder regions of Andalucia is inseparably beset with difficulties at every point; but these I have purposely abstained from enlarging upon. Eventually, after dragging the lame beasts some twenty miles, we succeeded in getting clear. Passing the outlying spurs of the sierra, a pair of large dark Eagles were noticed hunting a scrub-covered ridge. The larger one presently swept down upon an unlucky rabbit, and forthwith commenced to devour it. The male Eagle thereupon perched on a stump 100 yards or so further off. They were favourably placed for a stalk, so riding round in a wide circuit, I crept down within 40 yards of the larger Eagle, and killed her as she rose. This bird proved to be *Aquila bonellii*, a fine adult female. On the 19th May, riding homewards over the low rolling hills adjacent to the sierra, a great number of Little Bustards were descried: they were extremely wild and watchful; but after great difficulty I managed to shoot a beautiful male from horseback. I was at once struck with the extraordinary appearance of the throat and neck, resembling a black ruff. At first I thought this might arise from an effusion of blood, as one often sees, in a less degree, in a shot Grouse; but a careful examination of this, and of another male I obtained afterwards, showed that it arose from the inflation of the

gular pouch, which appears to be chronically distended during the breeding-season—a fact I have not seen recorded. The black feathers on the lower part of the neck are long and hackle-like.

June in Spain is a month of intense heat. According to the Spanish proverb, “Nothing but a dog or an Englishman” ventures out of doors; nor, according to my experience, is there much inducement to do so. The teeming variety of bird-life which characterizes April and May is now conspicuously absent. Migration is suspended, and there is no movement of passage-birds. There is no longer the accustomed quantity of large Hawks hunting the “campina;” and even those birds which remain seem to keep out of sight, sheltering from the blazing heat. This is the time to get the eggs of the Herons, for any one who has sufficient pluck to ride, say, 50 or 60 miles through the scorching suffocating marisma, where the dothinging heat reflected from the cracked mud is simply intolerable.

Perhaps the most interesting birds at this season are the newly-fledged young of the Raptores. The young Imperial Eagles are of a beautiful uniform rich tawny colour, and at midday frequent the trees where they were hatched. The plumage of these birds rapidly fades with age and exposure to the sun, and appears by the following spring almost white at a distance. The next stage is the acquisition of the black plumage, I think, during their second autumn. These black feathers coming gradually and irregularly among the light ones, give the bird at that period a peculiar spotted or piebald appearance. I also obtained young Kites (*Milvus iclinus*) in the same way—very handsome birds, much ruddier than the old ones in April. The young of *M. migrans*, on the contrary, are less pleasing than their parents, being, in fact, a pale, rather “washed out” reproduction of them. Towards the end of the month the young Montagu’s Harriers are on the wing; they have dark brown backs, each feather edged with chestnut, a white nape, and rich orange-tawny breasts. An adult male, shot on the 10th, was much blacker than those killed in April, caused by the wearing of the edges of

the upper coverts. Many of the young of the Marsh-Harrier are uniformly very dark, almost black, with rich orange crowns, strikingly handsome birds. Some have also patches of the latter colour on the scapulars, others on the breast; but they vary greatly, no two are alike. Indeed, I hardly understand this species. One imagines that the dark specimens are all young birds, that the old females are lighter brown with yellow heads, and that the very old males acquire half-blue wings and tail. I shot one of these latter with the head pure white, each feather streaked centrally with black. But can any one account for an individual (otherwise uniformly black) having a perfectly developed blue tail and secondaries? During June I was surprised to find the Green Sandpiper tolerably numerous in the Coto de Doñana; it was a very solitary species, a single bird frequenting each water-hole far out among the scrub. I at first imagined that the females must be sitting; but all efforts to find a nest were of course futile. Of the Wood-Sandpiper a single example occurred in the middle of May.

June 15th. A solitary Black Vulture (*Vultur cinereus*) observed sitting on a dead tree in the Coto de Doñana. I also saw this species in the sierra, where they breed sporadically, a single pair sometimes appearing to ally themselves to a colony of Griffons. The Sardinian Starling (*Sturnus unicolor*) was abundant, in flocks, in June.

The following remarks refer to a few other species observed, but which have not been mentioned in the narrative:—

Elanus melanopterus. Observed what I believe to have been a pair of this species above San Lucar in April. The male fell to a long shot, but subsequently rose again and escaped.

Accipiter nisus. Observed a few times, and one or two shot: not common. Of the Goshawk and Honey-Buzzard, I saw nothing.

Asio otus and *A. brachyotus*. Both species observed in winter.

Alcedo ispida. More numerous in Portugal than in Spain.

Gallinula chloropus. Abundant and resident. Its Portu-

guese name "Rabo-coelho," *i. e.* rabbit-tail, appears a singularly happy one.

Porphyrio ceruleus was frequently described to me; but I did not myself meet with it. Felipe found a nest at the end of May.

Ciconia nigra. Scarce. A pair shot, right and left, near Jerez, in March.

Puffinus — (? sp.) and *Stercorarius* — (? sp.). Observed abundantly in the Straits of Gibraltar in March.

Sula bassana. Also observed in the Straits and Bay of Trafalgar. On March 29th several were observed in the middle of the Bay of Biscay, flying northwards.

Thalassidroma pelagica. Observed abundantly on the coast in autumn, but none in spring.

The following are a few of the species met with in winter, but which returned north in spring:—

Mergus serrator. Rather numerous.

Colymbus septentrionalis. Less common.

Charadrius plumialis. Abundant.

Gallinago caelestis, *G. gallinula*, *Scolopax rusticola*. Common.

Snipe are very numerous in favourable seasons. From 50 to as many as 100 couple are sometimes bagged in a day by two or three guns. Out of 150 shot by myself at Ovar, in Portugal, the proportion of Jacks was 33 to 117 full Snipe. The last shot was on April 8th. Of Woodcock the heaviest bag I heard of in Andalucia was seventeen couple (two guns); but this is exceptional.

Crex pratensis. Scarce.

Turdus musicus, *Sturnus vulgaris*, *Anthus pratensis*. Common.

Alauda arvensis. Common.

Erithacus rubecula. Scarce.

Motacilla alba. Very abundant, especially in September.

M. boarula. Less common.

Corvus corone. Scarce.

C. frugilegus. Occasional flocks.

Besides these, many other species are found, notably most of

our common British Laridæ and many of the Anatidæ Wigeon, in particular, were very numerous from October to March, and not being much molested at "flight" time, came in from the sea much earlier and more regularly than is their wont at home, where every *Zostera*-covered estuary is, at night, "horrid" with guns.

During the autumnal passage the following species were obtained on the coast of Portugal:—

Numenius arquatus and *N. phaeopus*. The former remained throughout the winter; but the Whimbrels went on further south.

Limosa rufa, *Totanus canescens*, *T. hypoleucus*, and *Tringa canutus*. All abundant on passage; but none obtained after September. All immature.

Ægialitis hiaticula, *Tringa maritima*, *T. cinclus*, and *Streptopelia interpres*. These also arrived in September; but many remained throughout the winter.

May 31st. At Tangier, M. Olcese showed me a clutch of five eggs unknown to him, and which were certainly those of the Missel-Thrush. I also obtained from him a beautiful adult Lanner Falcon—the only dollar, by the way, I invested in collector's skins.

This concludes my ornithological record. It is, I fear, very imperfect and very unskillfully put together; but I have a certain confidence in my facts, for I spared no pains or trouble to ascertain what I have written. Spending weeks at a time in the wildernesses and sierras of Spain, camping out in the open wherever night overtook me, and, my own affinities being decidedly "raptorial," I have myself shot most of the birds herein enumerated, from the Tomtit to the Golden Eagle.

In conclusion I wish to acknowledge my obligation to the owners of the Coto de Doñana for so kindly placing their noble domain and army of keepers at my disposal; and last, not least, to express my deep and lasting gratitude to those kind friends, both in Spain and Portugal, at whose hands I have been the recipient of such untiring assistance and abounding hospitality.